

REMARKS

Reconsideration of the present application, as amended, is respectfully requested.

Claims 1-19 are pending in the application.

The Examiner rejected claims 1-7 and 13, 15, 16-18 under 35 U.S.C. §102(e) as being anticipated by Itakura et al. (U.S. 6,278,873B1) and claims 8-11 under 35 U.S.C. §103(a) as being unpatentable over Itakura in view of Bolanos (U.S. 6,926,144A). Claim 12 was rejected under 35 U.S.C. §103(a) as being unpatentable over Itakura in view of Asano (U.S. 6,255,995B1) and claims 15 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Itakura. These rejections are respectfully traversed.

Itakura et al. Discloses a wristwatch-type communication device with a loop-shaped antenna 6 comprising a first conductor portion 23 formed in a ring and a second conductor portion 24 opposed to the first conductor portion and a third conductor portion 25 connecting the first and second conductor portions. The loop of antenna 6 starts from feeder terminal 23a, continues through parts 23, 25 and 24, respectively, and ends at feeder terminal 24a. Thus, the loop of antenna 6 cannot substantially be considered as being disposed in a plane, since antenna 6 is not planar but extends in all three dimensions.

Even if, as the Examiner argues, the loop (i.e. parts 23a, 23, 25, 24 and 24a respectively) formed by antenna 6 were considered as disposed in a plane, such a plane would be vertical in Figure 1 of Itakura et al. This is evident from col. 6, lines 1 to 8 of Itakura et al., which defines that

the aperture area S defined by the loop antenna is $L \times H$. Figure 1 clearly shows how the aperture $L \times H$ of the loop antenna and thus the loop is in fact vertical, whereas the circuit boards 14 and 15 are disposed on horizontal planes in Figure 1. In other words, such a plane of the loop (with an aperture area $L \times H$) from terminal 23a to terminal 24a of antenna 6 is in fact substantially perpendicular to the planes of the circuit boards 14 and 15, not coplanar.

In addition, it should be pointed out that the fact that the conductor parts 23 and 24 of the antenna 6 are ring-shaped is of no relevance to the patentability of the present invention since the shape of these ring-shaped portions does not affect the electrical performance of the loop antenna 6. In fact, they could be replaced with straight conductor strips having a length L and still achieve the same loop aperture area and consequently, the same gain of the antenna (see col. 6, lines 1 to 8 of the Itakura et al.). In particular, these ring-shaped portions 23 and 24 should not be confused with the loop of the loop antenna 6 consisting of parts 23a, 23, 25, 24 and 24a.

As a consequence, Itakura et al. Fails to teach at least the following underlined feature of the present invention as claimed in amended claim 1 of the present application:

...the loop antenna comprising a single loop formed of a conductor formed into a, the loop defining an area and being disposed in a second plane; wherein the electrically conductive parts of at least one of said one or more circuit substrates substantially act as a ground plane causing a ground plane effect for the loop antenna and wherein said first plane is substantially coplanar with said second plane and such that at least the electrically conductive parts of said at least one circuit substrate are within said area defined by the loop when observed in plan view minimizing the ground plane effect of the electrically conductive parts of said at least one circuit substrate on the loop antenna.

Therefore, it can be stated that the present invention, as claimed in amended independent

Appl. No. 09/769,851
Amdt. Dated February 3, 2004
Reply to Office Action of November 3, 2003

9038.1001

claim 1, is patentable over Itakura et al. Furthermore, none of the other cited references disclose anything relevant that would overcome the above deficiencies of Itakura et al. In particular, the loop of the loop antenna 302 disclosed in Bolanos et al. is clearly perpendicular to the circuit substrate 406. Moreover, Asano et al. Relates to a patch antenna solution and thus has no relevance to the patentability of the present invention.

In view of the amendments to the claims made herein and the arguments presented above it is submitted that the Examiner's rejections have been overcome and should be withdrawn and the present application should now be in condition for allowance.

Should any changes to the claims and/or specification be deemed necessary to place the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned to discuss the same.

Appl. No. 09/769,851
Amdt. Dated February 3, 2004
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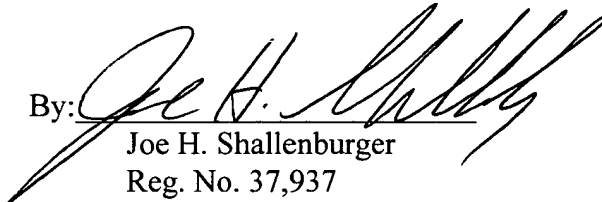
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It is believed that the submission of this Amendment is timely. In the event that any extensions and/or fees are required for the entry of this Amendment, the Commissioner is specifically authorized to charge such fee to Deposit Account No. 50-0518 in the name of Steinberg & Raskin, P.C.

An early and favorable action on the merits is earnestly solicited.

Respectfully submitted,
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